Océ User Manual

Océ CS550/CS6xx Pro

Calibration

Océ-Technologies B.V.

© 2009 Océ
All rights reserved. No part of this work may be reproduced, copied, adapted, or transmitted in any form or by any means without written permission from Océ.

Océ makes no representation or warranties with respect to the contents hereof and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose. Further, Océ reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation to notify any person of such revision or changes.

Edition: 2009-03

GB

Contents

Chapter 1
Introduction **5**
Basic system configuration 6
Why calibration 7
Main steps in calibration 8

Chapter 2
Check the print quality **9**
2.0 Check the print quality 10

Chapter 3
Controller calibration **11**
3.1 Calibrate the EFI controller 12
3.1 Calibrate the Creo controller 17
3.1 Calibrate the Océ PRISMAsync controller 20
3.2 Check the print quality 28

Chapter 4
Printer calibration **29**
4.1 Perform the adjustment operation 30
4.2 Adjust the white point (gamma offset) 33
4.3 Calibrate the EFI controller 39
4.3 Calibrate the Creo controller 44
4.3 Calibrate the Océ PRISMAsync controller 47
4.4 Check the print quality 55

Chapter 1
Introduction

Basic system configuration

The basic system configuration contains the following parts.

- Printer
- Controller
- Scanner.

The basic system configuration has one of the following controllers

- Fiery ® PRO80/S450 65C-KM Color Server (IC303/IC305), default including a photo spectrometer
- Creo controller, IC304/IC304 Plus, default including a photo spectrometer
- Fiery ® X3e TY2 65C-KM (embedded controller (IC408) for which a photo spectrometer is optional.
- Océ PRISMAsync controller (Océ CS655 and Océ CS665 only) for which a photo spectrometer is optional.

You can only calibrate a controller if you have a photo spectrometer.

Note:
Do not use the ColorCal / Off-the-glass method as described in the controller documentation.

Why calibration

The printer is calibrated for a screen at installation and at every next service visit. The default screen is Dot 1. The Océ CS550/CS6xx Pro will hold on to the calibrated level of print quality by automatically performed adjustments. In normal circumstances there is no need to do additional calibrations.

External circumstances, for example temperature, humidity and consumables change over time. These changes effect the colour reproduction. You can perform a calibration as described in this document to eliminate the effect of the external circumstance on the colour reproduction.

There is no need or use to calibrate the scanner.

Main steps in calibration

Main step	Sub-step
1. Check the print quality	*'2.0 Check the print quality'* on page 10
Continue only if the colour reference chart does not meet your requirements.	
2. Calibrate the controller	*'3.1 Calibrate the EFI controller'* on page 12 or *'3.1 Calibrate the Creo controller'* on page 17 or *'3.1 Calibrate the Océ PRISMAsync controller'* on page 20
	'3.2 Check the print quality' on page 28
The result of the controller calibration as checked in 3.2 normally meets the required print quality. If the print quality still does not meet your requirements, you can consider to proceed with the printer calibration.	
3. Calibrate the printer	*'4.1 Perform the adjustment operation'* on page 30 [1]
	'4.2 Adjust the white point (gamma offset)' on page 33 [1]
	'4.3 Calibrate the EFI controller' on page 39 [2] or *'4.3 Calibrate the Creo controller'* on page 44 [2] or *'4.3 Calibrate the Océ PRISMAsync controller'* on page 47 [2]
	'4.4 Check the print quality' on page 55

Note:
[1] Calibration of your copy process only requires step 4.1 and 4.2.

Note:
[2] Calibration of the printer requires calibration of the controller because the controller takes the printer settings into account at controller calibration.

Chapter 2
Check the print quality

2.0 Check the print quality

Introduction

You can print the Océ Color Reference chart to check the print quality. You can download the print files used in this document form the Océ website. Before you print this chart, you need to warm up the machine.

Before you begin

Load the A4/Letter portrait reference media with the correct paper settings.
Load the A3/Tabloid reference media with the correct paper settings.

Note:
Reference media is the media that you use mostly (bulk). The Océ reference media is Océ Top Color 90 g/m².

Warm up the printer

1. Print the file 'Océ Startup Page.pdf'.

Result

The Océ CS550/CS6xx Pro is warmed up and ready to evaluate the print quality.

Print the Océ Color Reference chart

1. Print the file 'Océ Color Reference Chart.pdf'.

Result

The result is a printed Océ Color Reference chart to evaluate the print quality.

Chapter 3
Controller calibration

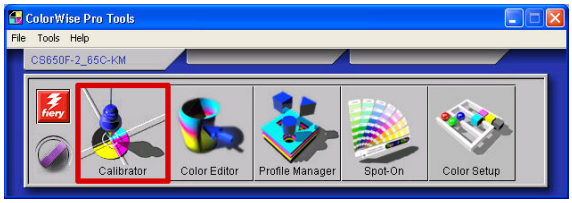
3.1 Calibrate the EFI controller

Introduction

The external controller is either an EFI (IC303/IC305/IC408), a Creo (IC304/IC304Plus) or an Océ PRISMAsync controller. This procedure describes the calibration of the EFI controller. In case of an IC408 controller you must use CWS on a remote PC. Before you can calibrate the EFI controller you must print the calibration chart.

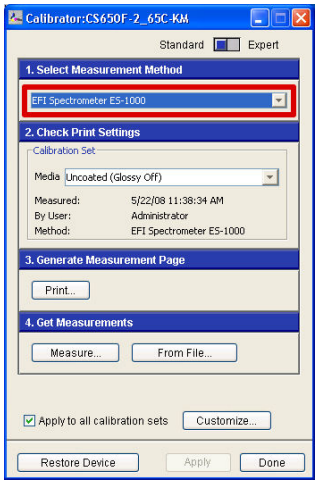
Print the calibration chart

1. From 'Command Workstation', click 'Server' - 'Manage color...'.
2. Click 'Calibrator'.



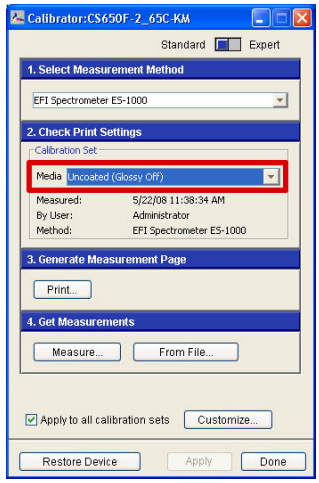
[1] Calibrator button

3. Select or check the measurement method.



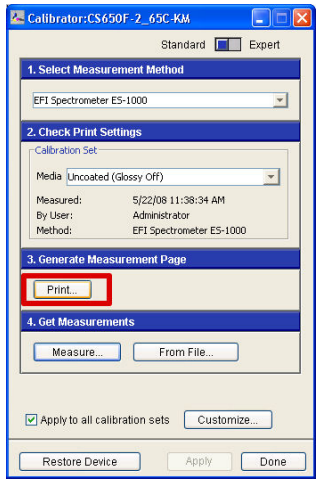
[2] Measurement method selection list

4. Select the media you want to use for calibration.



[3] Media selection list

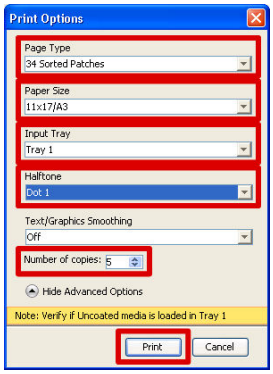
5. Click 'Print...' to set the print options and print the sorted patches chart.



[4] Print options button

6. Select the following settings.
   - At 'Page Type', select '34 Sorted patches' for A3/Tabloid (recommended). Select '21 Sorted Patches' for A4/Letter.
   - At 'Paper Size', select the setting according to the previous step.
   - At 'Input tray', select the tray that contains the selected paper type and size.
   - At 'Number of copies', select 5.
     Use the **last** print to calibrate.
   - At 'Show Advanced Options', check at 'Halftone' the correct screening. The default is 'Dot1'.

- Click 'Print' to print the sorted patches chart.



[5] Print options lists and print button

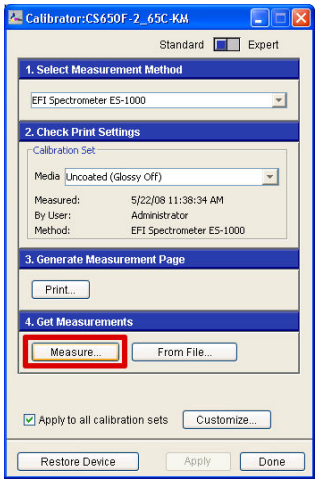
7. Click 'OK' to close the information window.

Result

The printer performs an automatic calibration adjustment and prints the sorted patches chart.

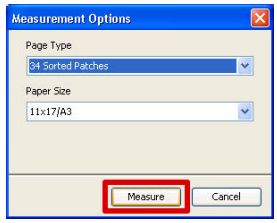
Calibrate the EFI controller

1. Click 'Measure...' to start the calibration.



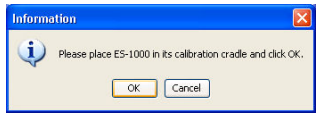
[6] Measurement options button

2. Check the measurement options and click 'Measure'.



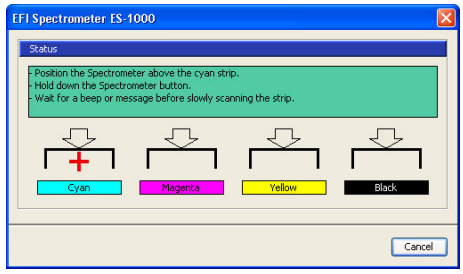
[7] Measurement button

3. Check the spectrometer and click 'OK'.



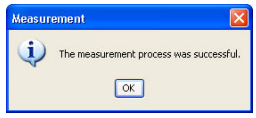
[8] Spectrometer ready?

4. Follow the instructions in the EFI Spectrometer window precisely.
   Perform the following actions per colour.
   - Position the spectrometer at the blinking red cross above the column with coloured patches.
   - Hold down the spectrometer button and wait for the beep.
   - Scan the column with patches slowly.



[9] Measurement instructions

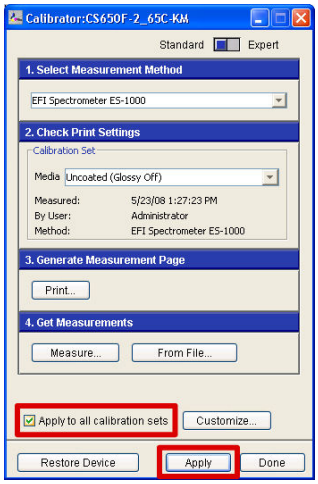
5. Click 'OK'.



[10] Measurement successful?

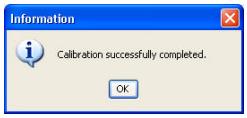
6. Apply the calibration.
   - Check 'Apply to all calibration sets' to use this calibration for all media.

- Click 'Apply'.



[11] Apply the measurement for all media?

7. Click 'OK'.



[12] Calibration successful?

8. To calibrate per media, return to step 3 of the 'Print the patches chart' .

Note:
Follow both the above procedures per screen you use.

Result

The EFI controller is calibrated.

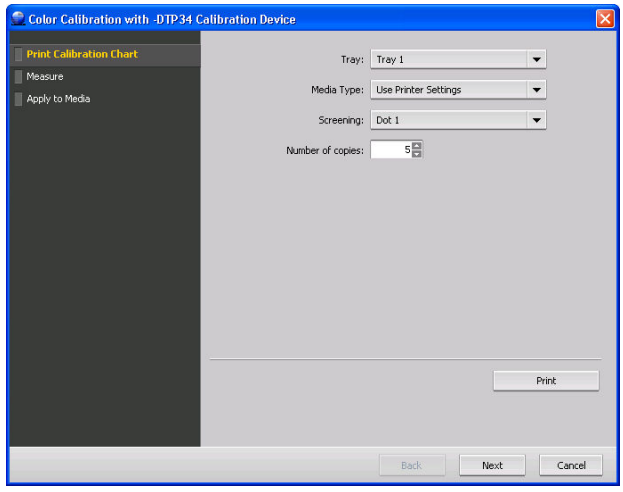
3.1 Calibrate the Creo controller

Introduction

The external controller is either an EFI (IC303/IC305/IC408), a Creo (IC304/IC304Plus) or an Océ PRISMAsync controller. This procedure describes the calibration of the Creo controller. At the beginning of the procedure you print a calibration chart that is used to calibrate the Creo controller.

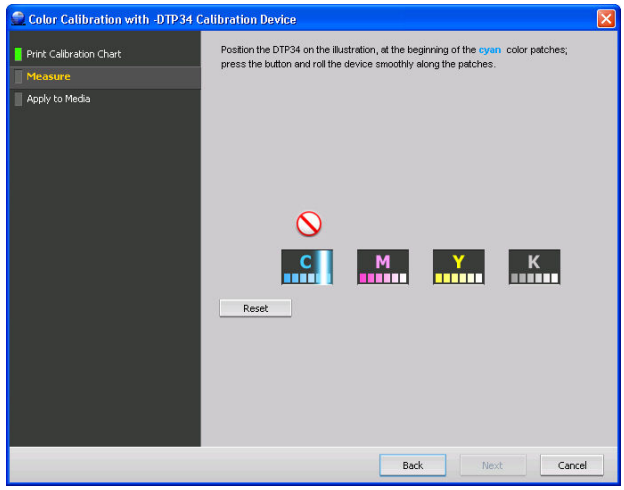
Calibrate the Creo controller

1. Click 'Tools' - 'Calibration'.
   The 'Color Calibration' window opens.
2. Print the calibration chart.
   - At 'Tray', select the location of the media you use mostly.
   - At 'Media Type:', define the media you use mostly.
   - At 'Screening:', define the screening you use.
     The default is 'Dot1'
   - At 'Number of copies:', select 5.
     Use the **last** print to calibrate.
   - Click 'Print'
     The printer performs an automatic calibration adjustment and makes the prints.



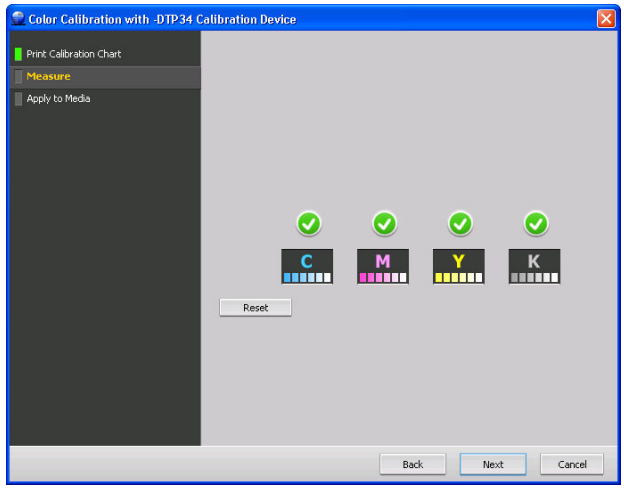
[13] Calibration chart settings

3. Follow the instructions in the 'Color Calibration' window to perform the measurement.



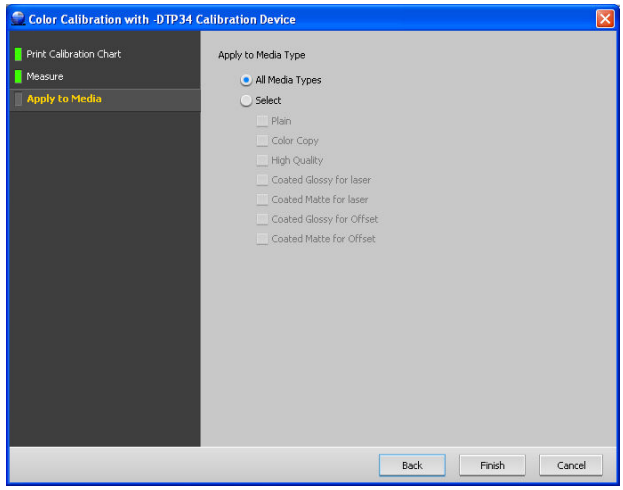
[14] Measurement instructions

4. Click 'Next' after successful calibration.



[15] Calibration successful?

5. Select the media for this calibration.



[16] Media selection window

6. Click 'Finish'.
7. Return to step 2 to calibrate other media you use.

Note:
Follow the above procedure per screen you use.

Result

The Creo controller is calibrated.

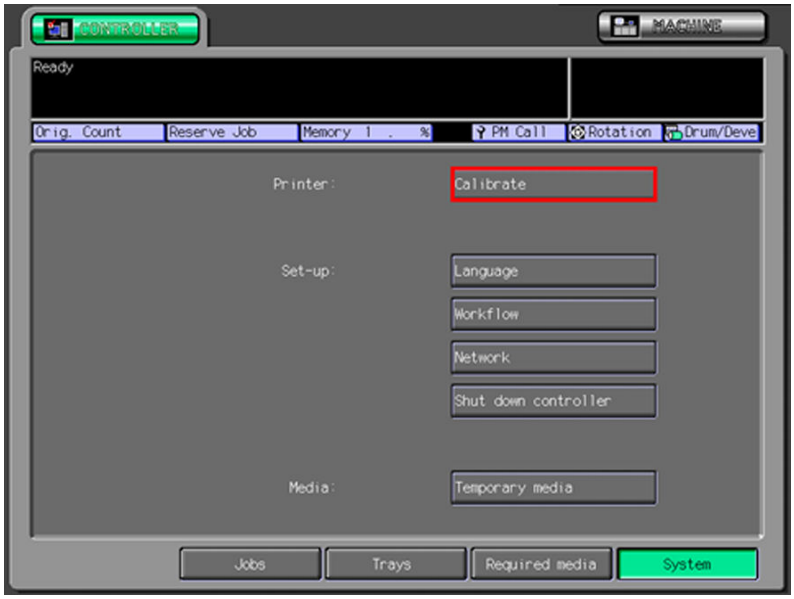
3.1 Calibrate the Océ PRISMAsync controller

Introduction

The external controller is either an EFI (IC303/IC305/IC408), a Creo (IC304/IC304Plus) or an Océ PRISMAsync controller. This procedure describes the calibration of the Océ PRISMAsync controller. At the beginning of the procedure you print a calibration chart that is used to calibrate the Océ PRISMAsync controller.

Print a calibration chart

1. From the 'System' view, press 'Calibrate'.

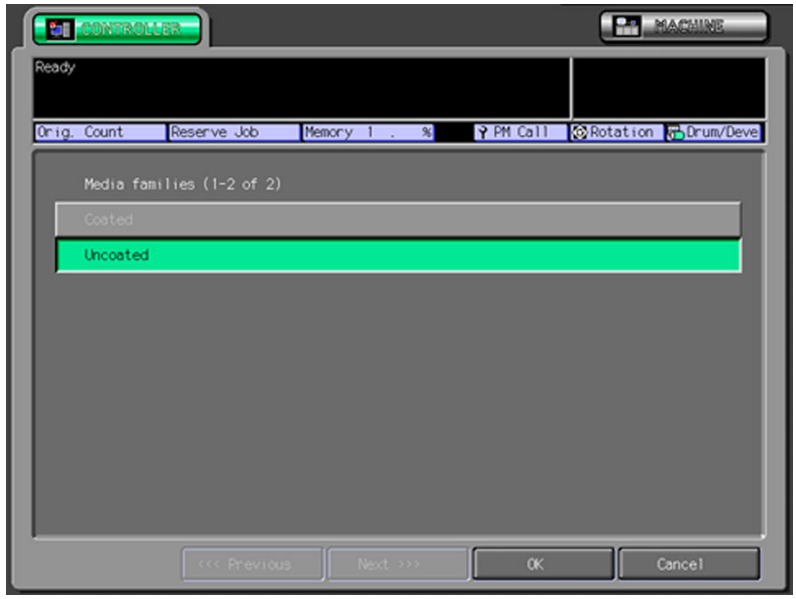


[17] 'System' view

The list of media families appears.

2. Select the 'Media family' you want to calibrate and press 'OK'.

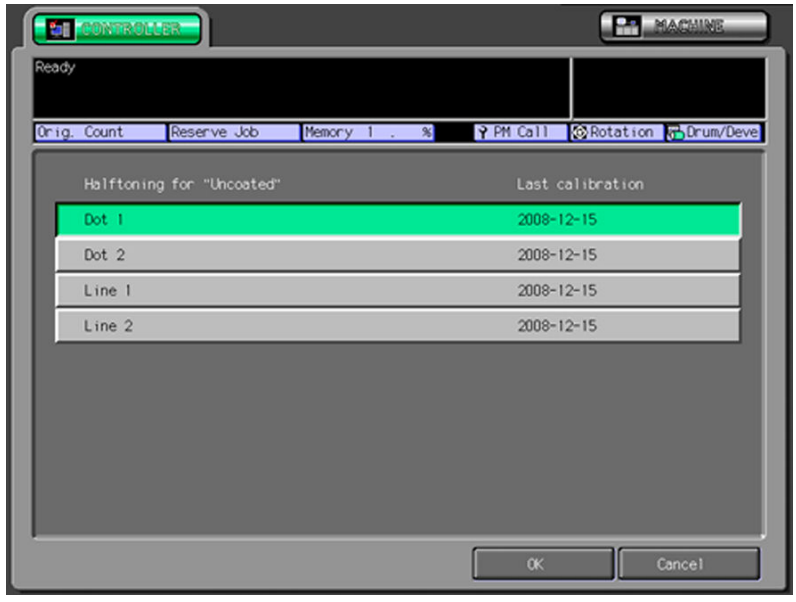
You can not select a media family that has no media defined.



[18] Media families

The list of halftones for the selected media family appears.

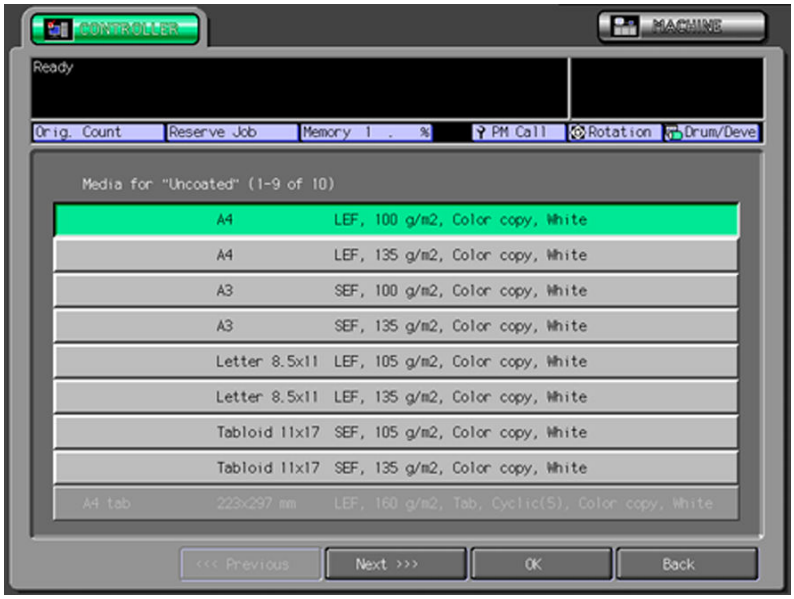
3. Press the required halftone and press 'OK'.



[19] Halftones

The list of media for the selected media family appears.

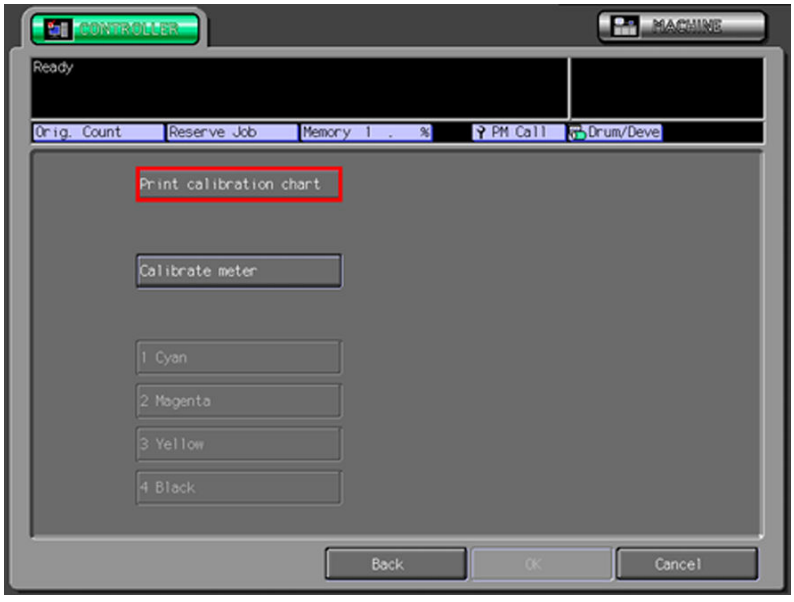
4. Select the media you want to calibrate and press 'OK'.


CONTROLLER
MACHINE
Ready
Orig. Count
Reserve Job
Memory 1 . %
PM Call
Rotation
Drum/Deve
Media for "Uncoated" (1-9 of 10)
A4 LEF, 100 g/m2, Color copy, White
A4 LEF, 135 g/m2, Color copy, White
A3 SEF, 100 g/m2, Color copy, White
A3 SEF, 135 g/m2, Color copy, White
Letter 8.5x11 LEF, 105 g/m2, Color copy, White
Letter 8.5x11 LEF, 135 g/m2, Color copy, White
Tabloid 11x17 SEF, 105 g/m2, Color copy, White
Tabloid 11x17 SEF, 135 g/m2, Color copy, White
A4 tab 223x297 mm LEF, 160 g/m2, Tab, Cyclic(5), Color copy, White
<<< Previous
Next >>>
OK
Back

[20] Media

The calibration view appears

5. Press 'Print calibration chart'.



[21] Calibration view

The printer is now adjusting.

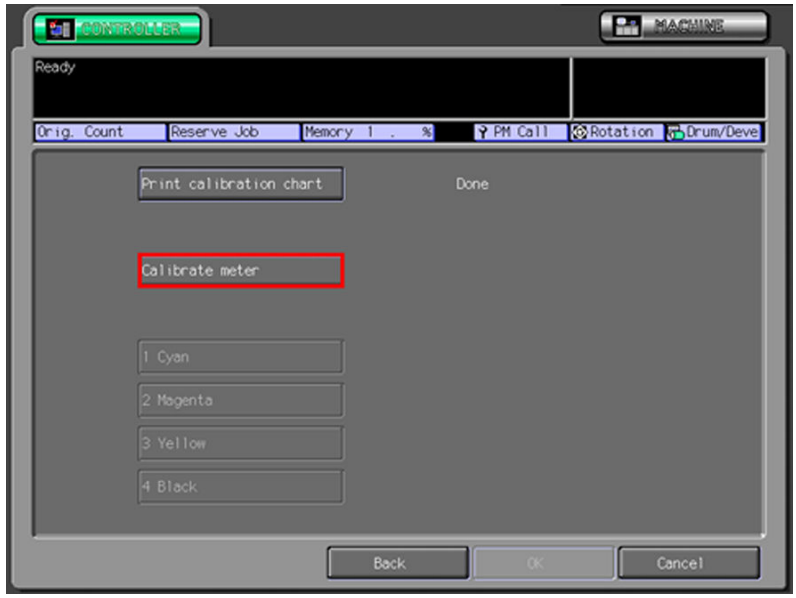
6. Please wait and check the progress at the upper left corner of the operator panel.

Result

The printer prints a calibration chart for the selected media family, halftone and media.

Calibrate the Océ PRISMAsync controller

1. Press 'Calibrate meter' and follow the instructions.



[22] 'Calibrate meter' option

2. Calibrate the meter.

[23] 'Place meter & push button'

- Place the X-Rite i1 meter in the holder.
- Press the button of the meter.
- Please wait until the meter is calibrated.

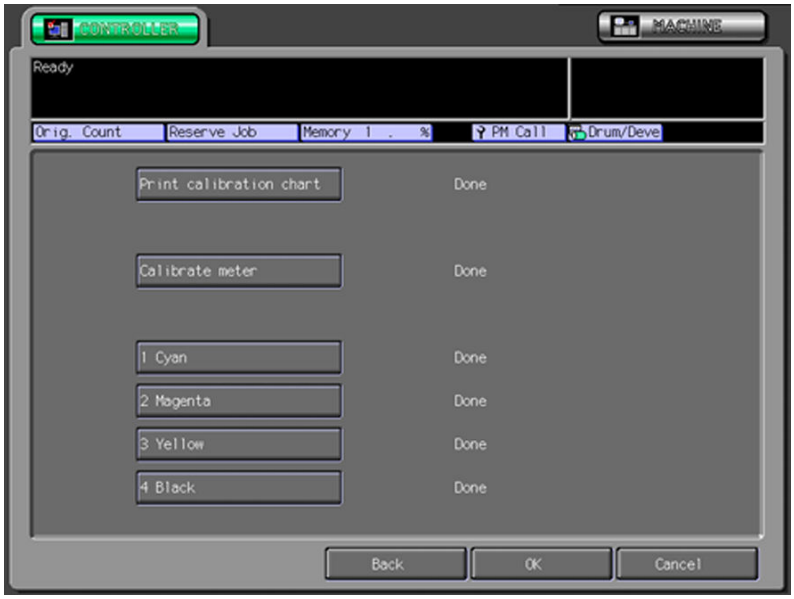
3. Put 4 sheets of the same media as the calibration chart under the calibration chart.

4. Scan the rows of the coloured patches.

[24] 'Place meter & hold button'

- Put the meter in the square at the left side of the first row.
- Press and hold the button of the meter until you hear a beep.
- Move the meter across the row of patches.
- Release the button of the meter.
- If the scan failed, select the current colour again on the operator panel and repeat the scan.
- If the can passed, repeat the previous actions for all other colours.

5. Press 'OK' to close the calibration view.

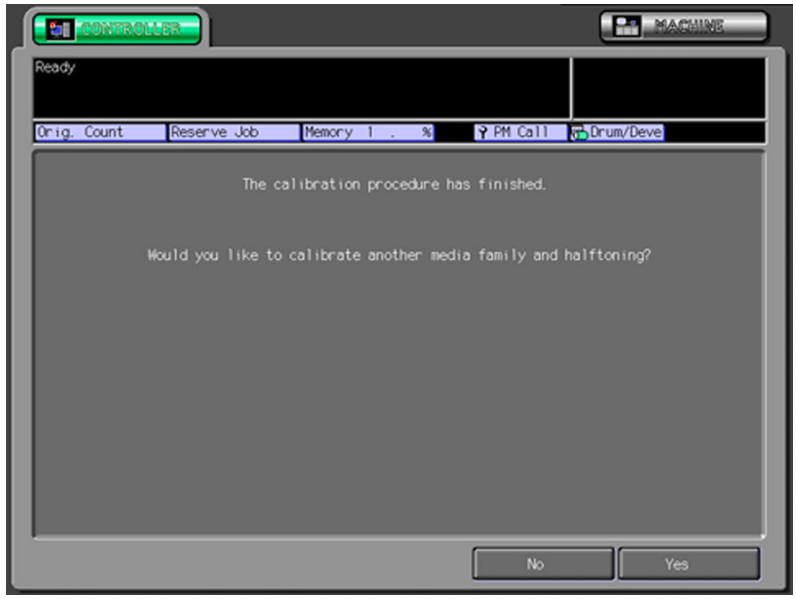


[25] Calibration view with succeeded scans

6. Press 'Yes' to save and apply the calibration

[26] Calibration confirmation window

7. Select one of the following options.



[27] Continue window

- Press 'Yes' to continue with the calibration procedure for another media family.
- Press 'No' to stop the calibration procedure.

Result

The controller is calibrated for the selected media family, halftone and media. Repeat the calibration for every media family, halftone and media you use.

3.2 Check the print quality

Introduction

The controller is now calibrated. You can print the Océ Colour Reference chart to check the print quality.

Print the Océ Color Reference chart

1. Print the file 'Océ Color Reference Chart.pdf'.

Result

The result of the controller calibration as checked normally meets the required print quality. If the print quality still does not meet your requirements, you can consider to proceed with the printer calibration. The printer calibration can give a better result when the print quality of light colours and gradients is critical.

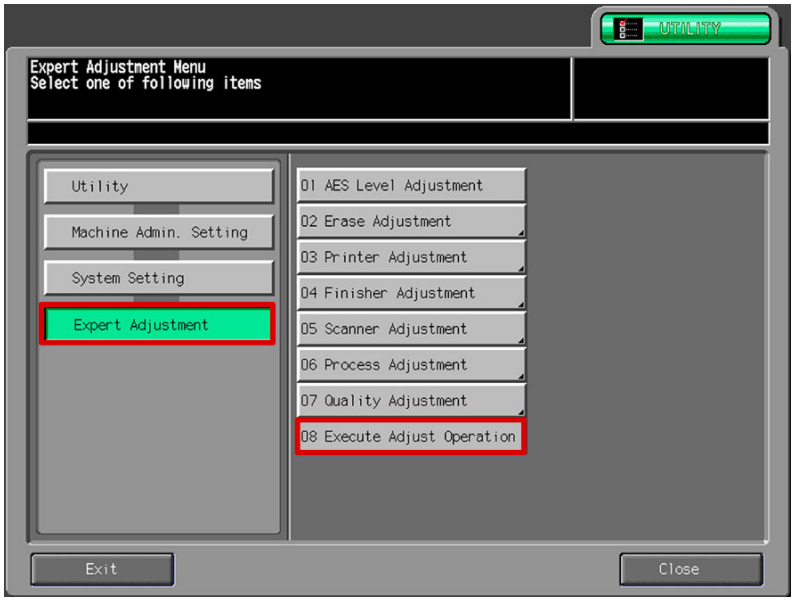
Chapter 4
Printer calibration

4.1 Perform the adjustment operation

Note:
Only perform the printer calibration if the result after controller calibration does not meet your requirements. In most cases the controller calibration will give the required result.

Perform the adjustment operation

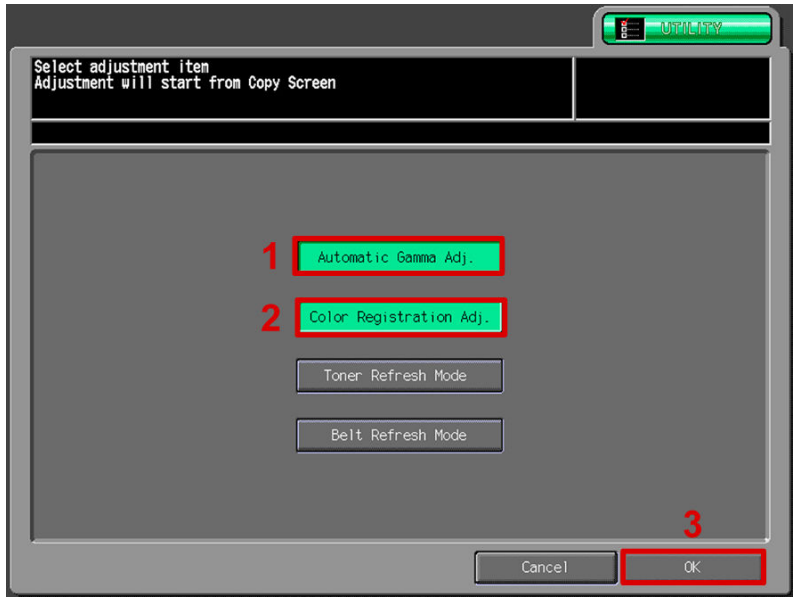
1. Select the following buttons to open the 'Expert Adjustment Menu'.
   - Utility / counter (key).
   - '03 Machine Admin.Setting'
   - '01 System Setting'
   - '05 Expert Adjustment'
2. Select '08 Execute Adjust Operation'.



[28] Expert Adjustment Menu

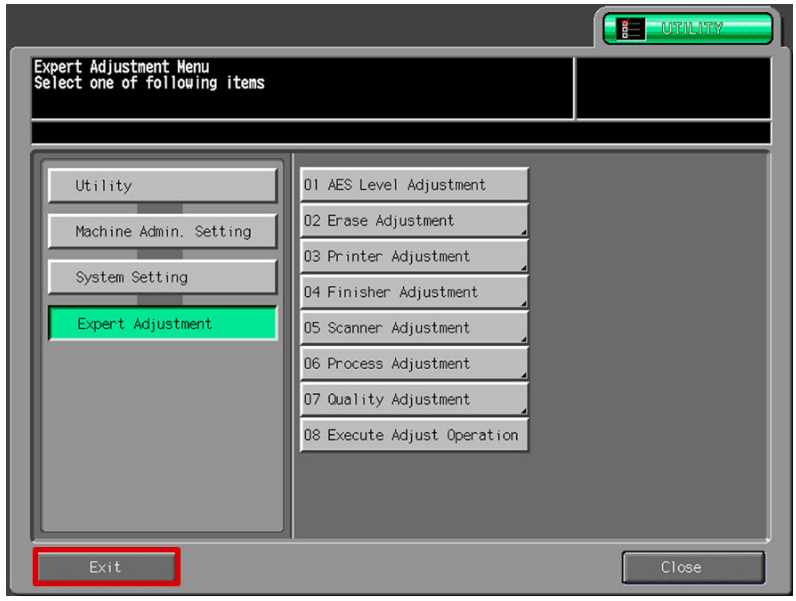
3. Select the following buttons to define the adjustment items.
   - 'Automatic Gamma Adj'
   - 'Color Registration Adj.'

- 'OK'



[29] Select Adjustment item

4. Select 'Exit' to start the automatic adjustment.



[30] Expert Adjustment Menu

The 'Machine' screen opens and displays 'Now adjusting'.

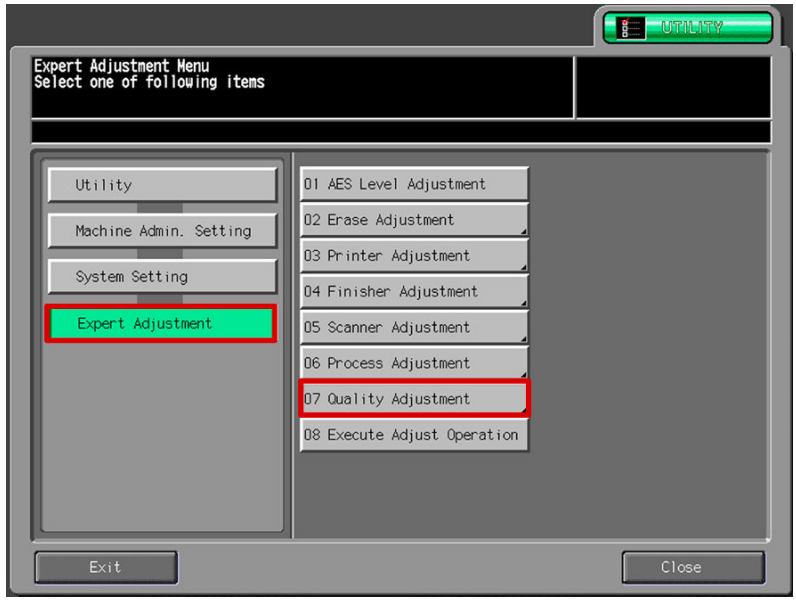
Result

The automatic adjustment takes approximately 4 minutes. The machine displays 'Ready to print' when the adjustment is completed.

4.2 Adjust the white point (gamma offset)

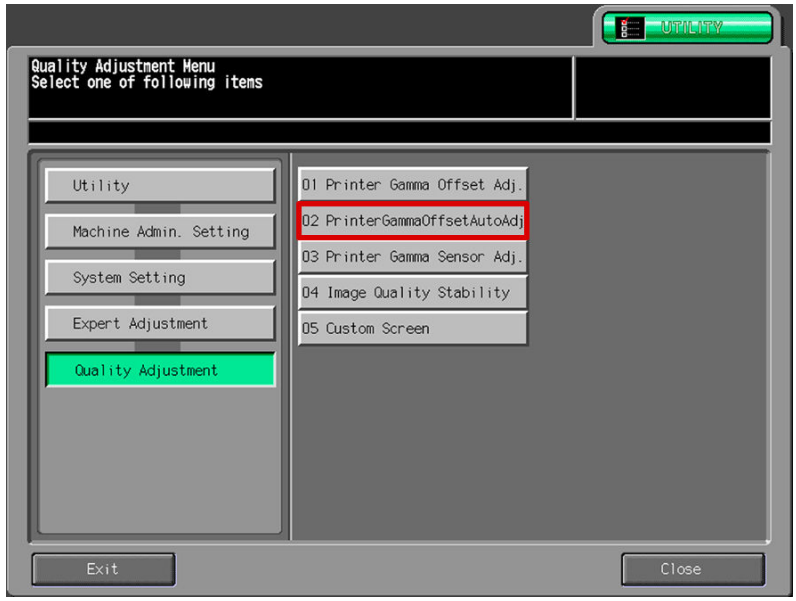
Print the gamma calibration chart

1. Select the following buttons to open the 'Expert Adjustment Menu'.
   - Utility / counter (key).
   - '03 Machine Admin.Setting'
   - '01 System Setting'
   - '05 Expert Adjustment'
2. Select '07 Quality Adjustment'.



[31] Expert Adjustment Menu

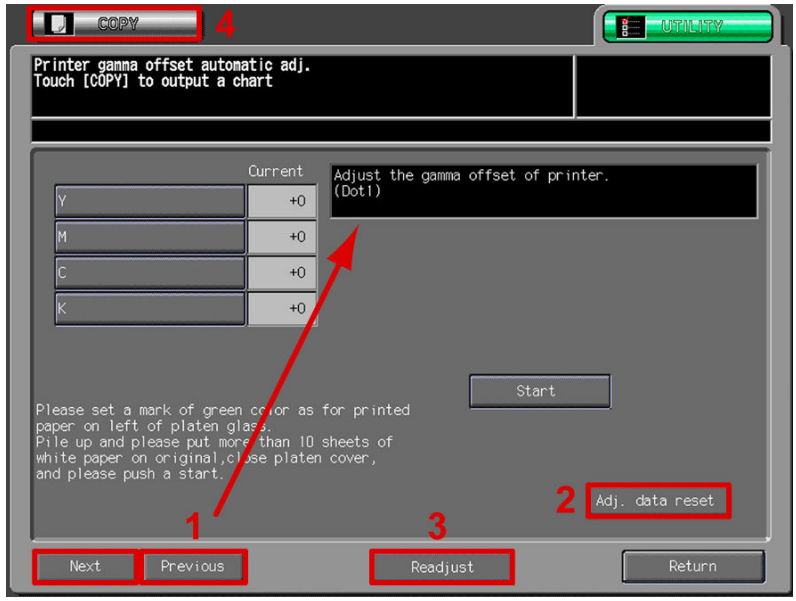
3. Select '02 Printer Gamma Offset Auto Adj.'.



[32] Quality Adjustment Menu

4. Select the following buttons to print the gamma calibration chart.
   - 'Next' and 'Previous' to define the required screening. The default is 'Dot1'
   - 'Adj. data reset' to set the gamma offset values to zero.
   - 'Readjust' to re-adjust the gamma offset.

- 'Copy' to open the 'Machine' screen.



[33] Printer gamma offset automatic adjustment menu

5. Make sure the correct reference paper is selected (A4/Letter, portrait) and press the green 'Start' key.

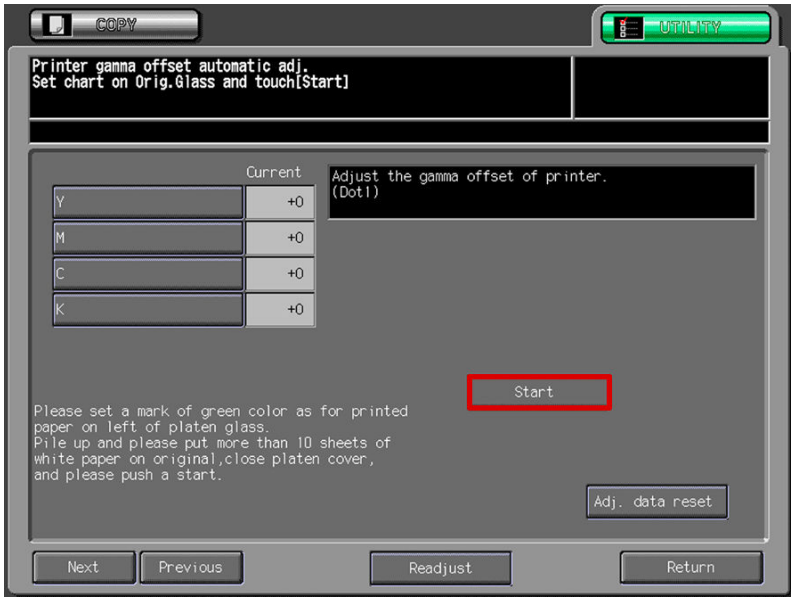
Result

A printed test chart to set the gamma offset values automatically.

Set the gamma offset values automatically

1. Place the printed test chart on the scanner, face down with the green arrow to the left.
2. Place a stack of 10 white pages on top of the test chart.

3. Press 'Start'.

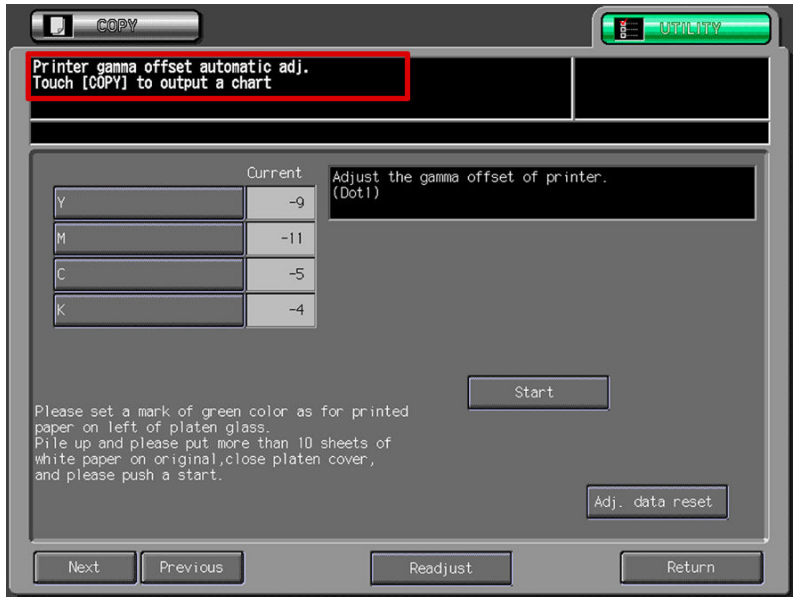


[34] Printer gamma offset automatic adj. menu

The values for the gamma offset are calculated automatically. New values are used to print a new test chart.

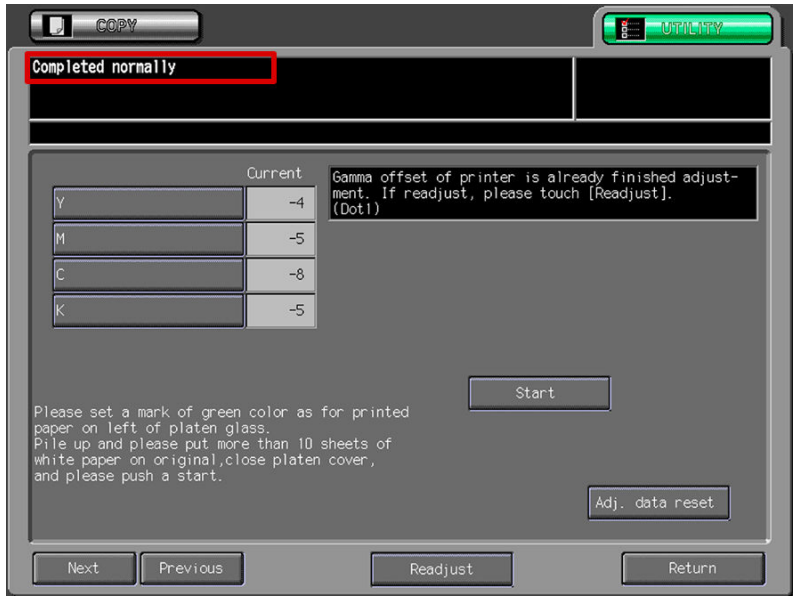
4. Check the calibration status message at the upper left.
If the message is 'Touch [COPY] to output a chart', do the following.
   - Select 'Copy'.
   - Press the green 'Start' key.
   - Repeat step 1-4.

Note:
Make sure you repeat step 1-4 until the message is 'Completed normally'.



[35] Calibration status message

If the message is 'Completed normally', the printer is adjusted properly.



[36] Calibration status message

Result

Now the white point of the printer is adjusted.

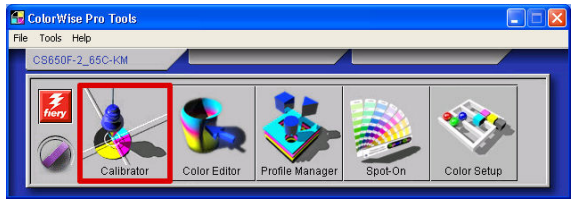
4.3 Calibrate the EFI controller

Introduction

The external controller is either an EFI (IC303/IC305/IC408), a Creo (IC304/IC304Plus) or an Océ PRISMAsync controller. This procedure describes the calibration of the EFI controller. In case of an IC408 controller you must use CWS on a remote PC. Before you can calibrate the EFI controller you must print the calibration chart.

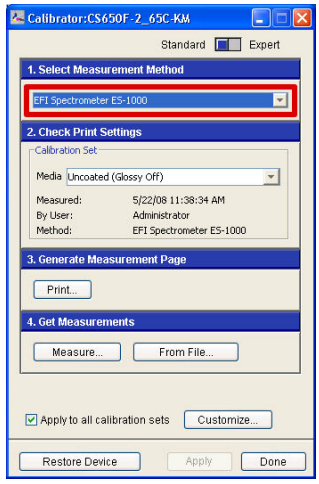
Print the calibration chart

1. From 'Command Workstation', click 'Server' - 'Manage color...'.
2. Click 'Calibrator'.



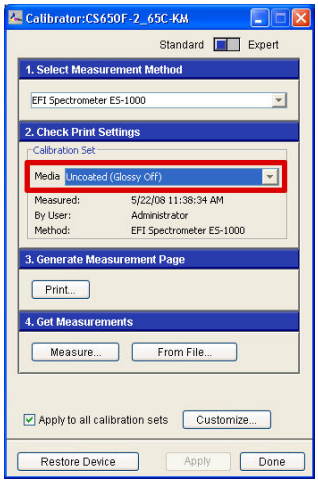
[37] Calibrator button

3. Select or check the measurement method.



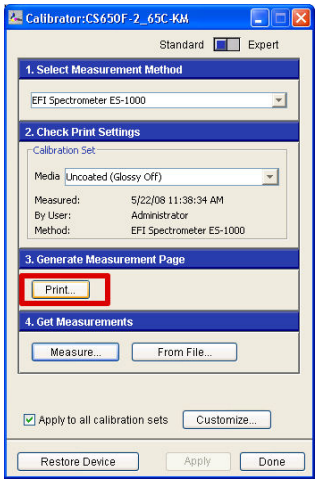
[38] Measurement method selection list

4. Select the media you want to use for calibration.



[39] Media selection list

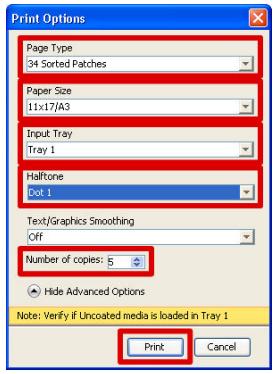
5. Click 'Print...' to set the print options and print the sorted patches chart.



[40] Print options button

6. Select the following settings.
   - At 'Page Type', select '34 Sorted patches' for A3/Tabloid (recommended). Select '21 Sorted Patches' for A4/Letter.
   - At 'Paper Size', select the setting according to the previous step.
   - At 'Input tray', select the tray that contains the selected paper type and size.
   - At 'Number of copies', select 5.
     Use the **last** print to calibrate.
   - At 'Show Advanced Options', check at 'Halftone' the correct screening. The default is 'Dot1'.

- Click 'Print' to print the sorted patches chart.



[41] Print options lists and print button

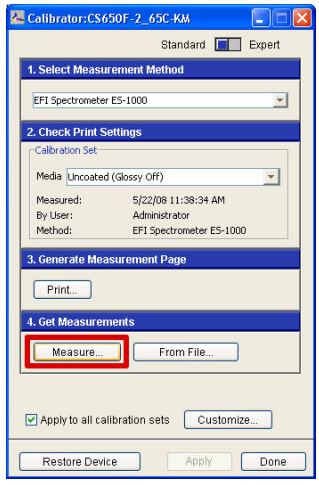
7. Click 'OK' to close the information window.

Result

The printer performs an automatic calibration adjustment and prints the sorted patches chart.

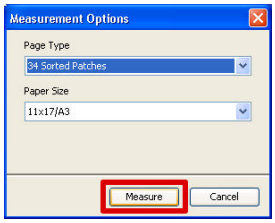
Calibrate the EFI controller

1. Click 'Measure...' to start the calibration.



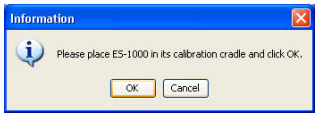
[42] Measurement options button

2. Check the measurement options and click 'Measure'.



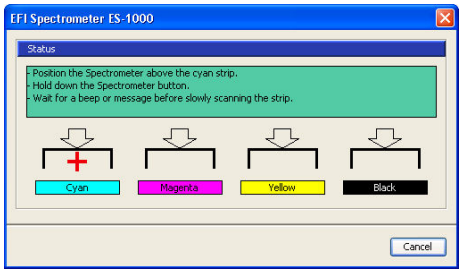
[43] Measurement button

3. Check the spectrometer and click 'OK'.



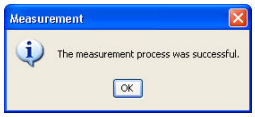
[44] Spectrometer ready?

4. Follow the instructions in the EFI Spectrometer window precisely.
Perform the following actions per colour.
   - Position the spectrometer at the blinking red cross above the column with coloured patches.
   - Hold down the spectrometer button and wait for the beep.
   - Scan the column with patches slowly.



[45] Measurement instructions

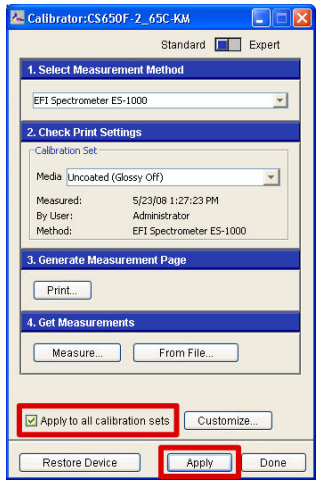
5. Click 'OK'.



[46] Measurement successful?

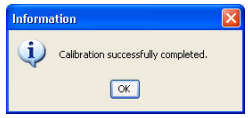
6. Apply the calibration.
   - Check 'Apply to all calibration sets' to use this calibration for all media.

- Click 'Apply'.



[47] Apply the measurement for all media?

7. Click 'OK'.



[48] Calibration successful?

8. To calibrate per media, return to step 3 of the 'Print the patches chart' .

Note:
Follow both the above procedures per screen you use.

Result

The EFI controller is calibrated.

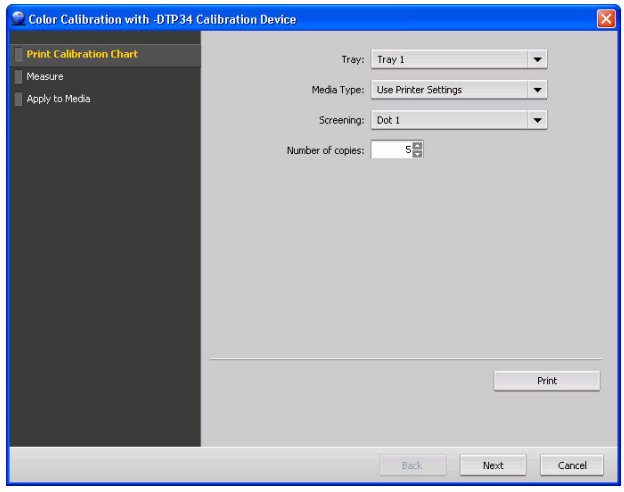
4.3 Calibrate the Creo controller

Introduction

The external controller is either an EFI (IC303/IC305/IC408), a Creo (IC304/IC304Plus) or an Océ PRISMAsync controller. This procedure describes the calibration of the Creo controller. At the beginning of the procedure you print a calibration chart that is used to calibrate the Creo controller.

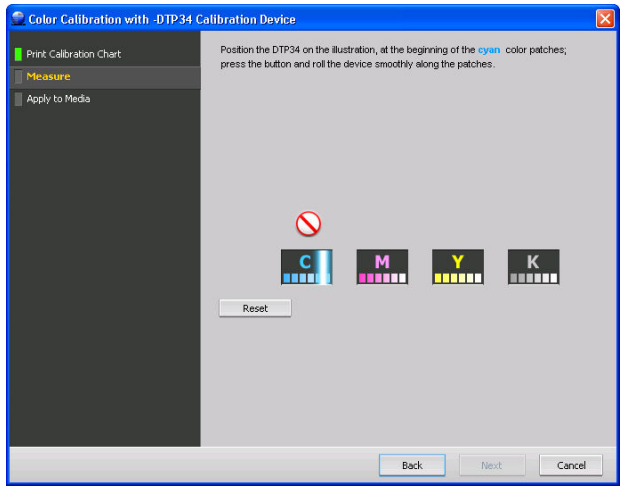
Calibrate the Creo controller

1. Click 'Tools' - 'Calibration'.
   The 'Color Calibration' window opens.
2. Print the calibration chart.
   - At 'Tray', select the location of the media you use mostly.
   - At 'Media Type:', define the media you use mostly.
   - At 'Screening:', define the screening you use.
     The default is 'Dot1'
   - At 'Number of copies:', select 5.
     Use the **last** print to calibrate.
   - Click 'Print'
     The printer performs an automatic calibration adjustment and makes the prints.



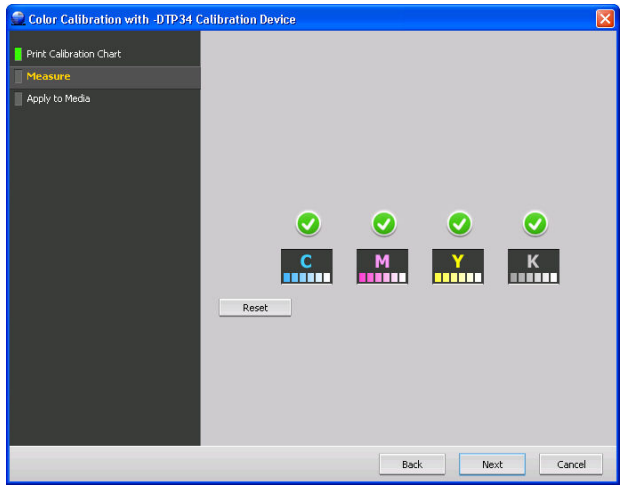
[49] Calibration chart settings

3. Follow the instructions in the 'Color Calibration' window to perform the measurement.



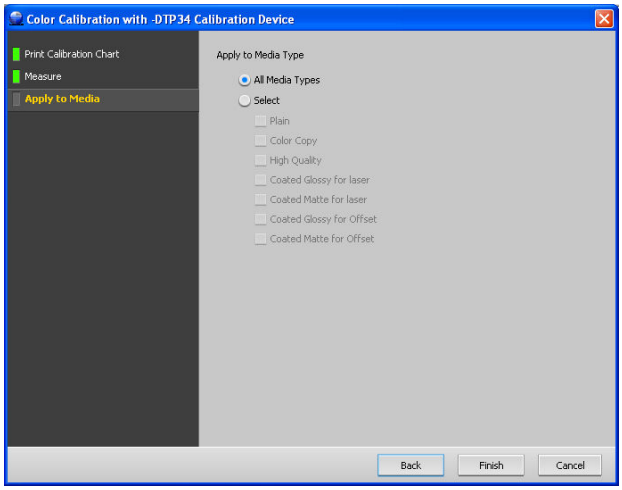
[50] Measurement instructions

4. Click 'Next' after successful calibration.



[51] Calibration successful?

5. Select the media for this calibration.



[52] Media selection window

6. Click 'Finish'.
7. Return to step 2 to calibrate other media you use.

Note:
Follow the above procedure per screen you use.

Result

The Creo controller is calibrated.

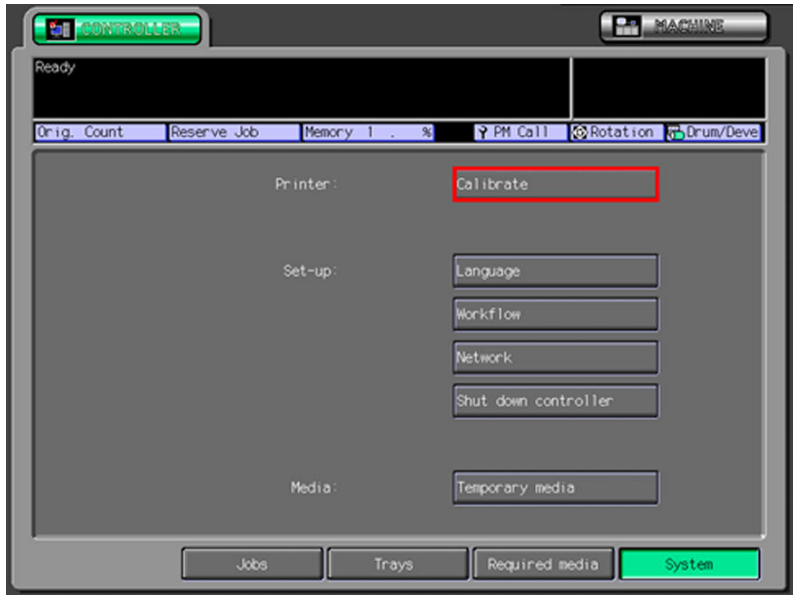
4.3 Calibrate the Océ PRISMAsync controller

Introduction

The external controller is either an EFI (IC303/IC305/IC408), a Creo (IC304/IC304Plus) or an Océ PRISMAsync controller. This procedure describes the calibration of the Océ PRISMAsync controller. At the beginning of the procedure you print a calibration chart that is used to calibrate the Océ PRISMAsync controller.

Print a calibration chart

1. From the 'System' view, press 'Calibrate'.

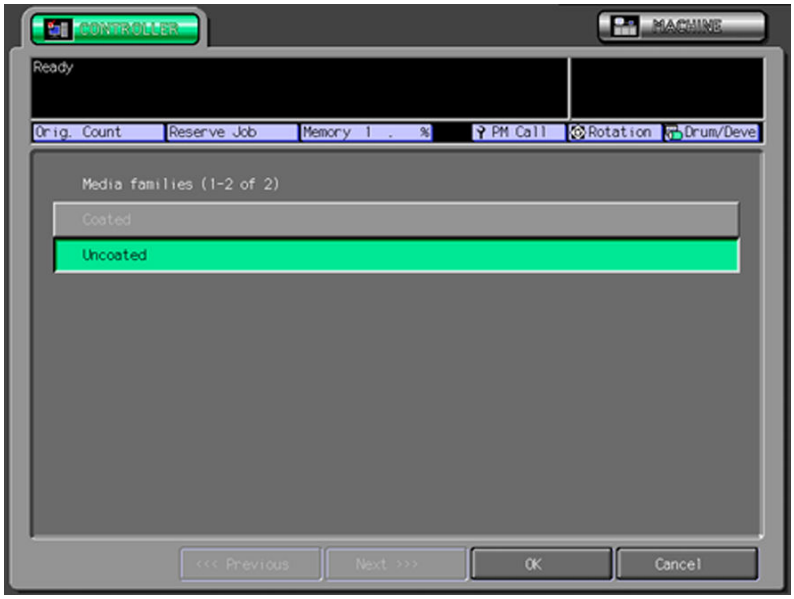


[53] 'System' view

The list of media families appears.

2. Select the 'Media family' you want to calibrate and press 'OK'.

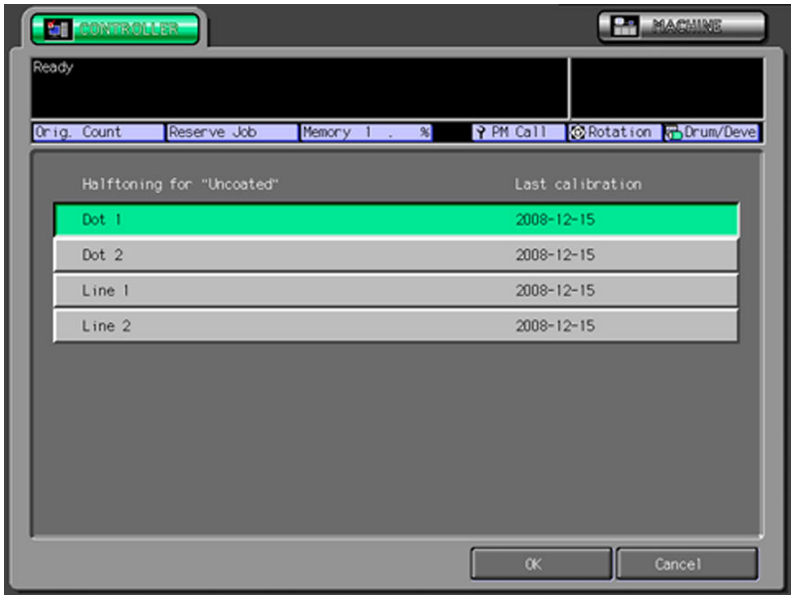
You can not select a media family that has no media defined.



[54] Media families

The list of halftones for the selected media family appears.

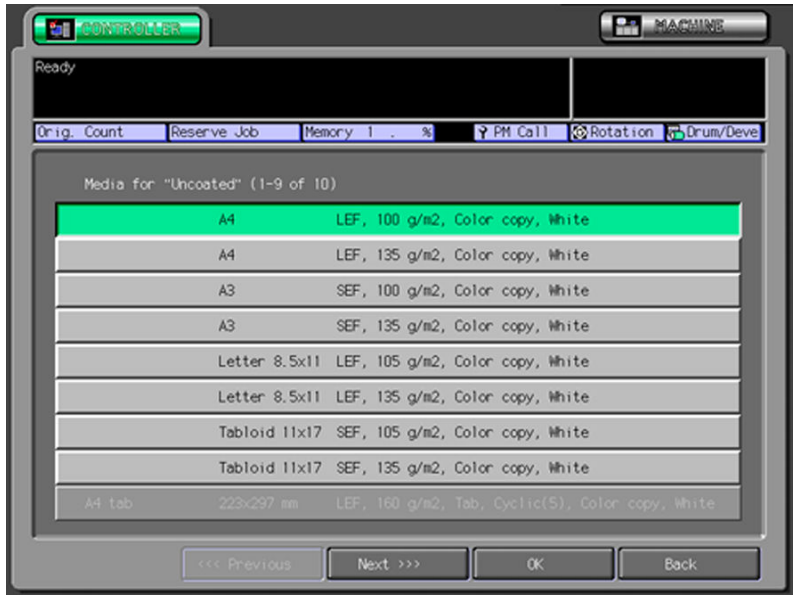
3. Press the required halftone and press 'OK'.



[55] Halftones

The list of media for the selected media family appears.

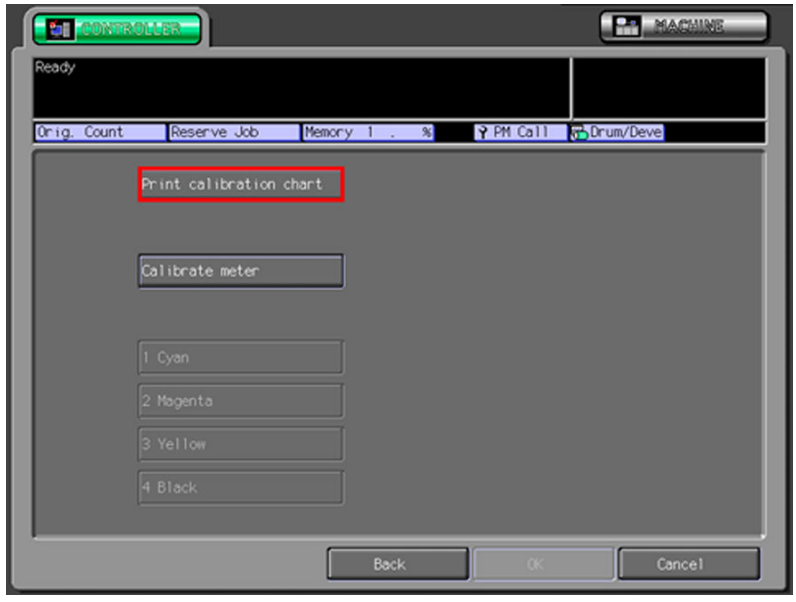
4. Select the media you want to calibrate and press 'OK'.


CONTROLLER
MACHINE
Ready
Orig. Count
Reserve Job
Memory 1 . %
PM Call
Rotation
Drum/Deve
Media for "Uncoated" (1-9 of 10)
A4 LEF, 100 g/m2, Color copy, White
A4 LEF, 135 g/m2, Color copy, White
A3 SEF, 100 g/m2, Color copy, White
A3 SEF, 135 g/m2, Color copy, White
Letter 8.5x11 LEF, 105 g/m2, Color copy, White
Letter 8.5x11 LEF, 135 g/m2, Color copy, White
Tabloid 11x17 SEF, 105 g/m2, Color copy, White
Tabloid 11x17 SEF, 135 g/m2, Color copy, White
A4 tab 223x297 mm LEF, 160 g/m2, Tab, Cyclic(5), Color copy, White
<<< Previous
Next >>>
OK
Back

[56] Media

The calibration view appears

5. Press 'Print calibration chart'.



[57] Calibration view

The printer is now adjusting.

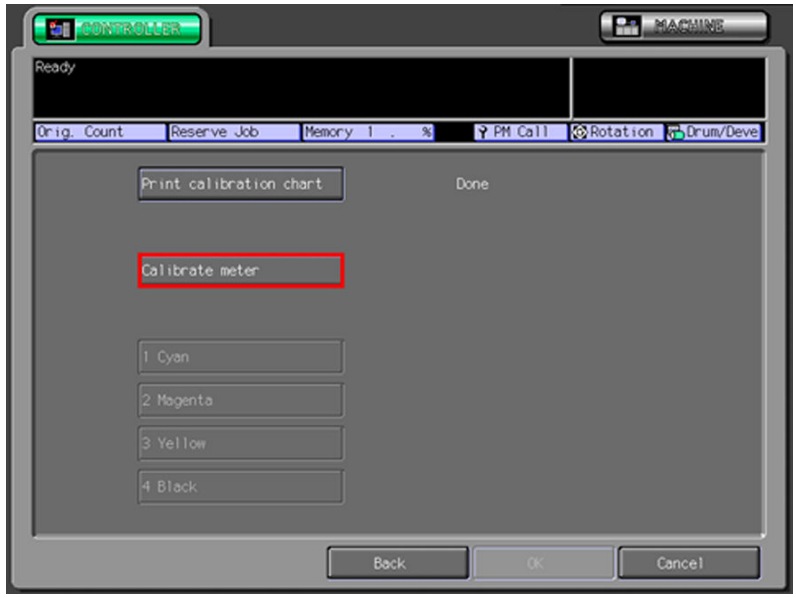
6. Please wait and check the progress at the upper left corner of the operator panel.

Result

The printer prints a calibration chart for the selected media family, halftone and media.

Calibrate the Océ PRISMAsync controller

1. Press 'Calibrate meter' and follow the instructions.



[58] 'Calibrate meter' option

2. Calibrate the meter.

[59] 'Place meter & push button'

- Place the X-Rite i1 meter in the holder.
- Press the button of the meter.
- Please wait until the meter is calibrated.

3. Put 4 sheets of the same media as the calibration chart under the calibration chart.

4. Scan the rows of the coloured patches.

[60] 'Place meter & hold button'

- Put the meter in the square at the left side of the first row.
- Press and hold the button of the meter until you hear a beep.
- Move the meter across the row of patches.
- Release the button of the meter.
- If the scan failed, select the current colour again on the operator panel and repeat the scan.
- If the can passed, repeat the previous actions for all other colours.

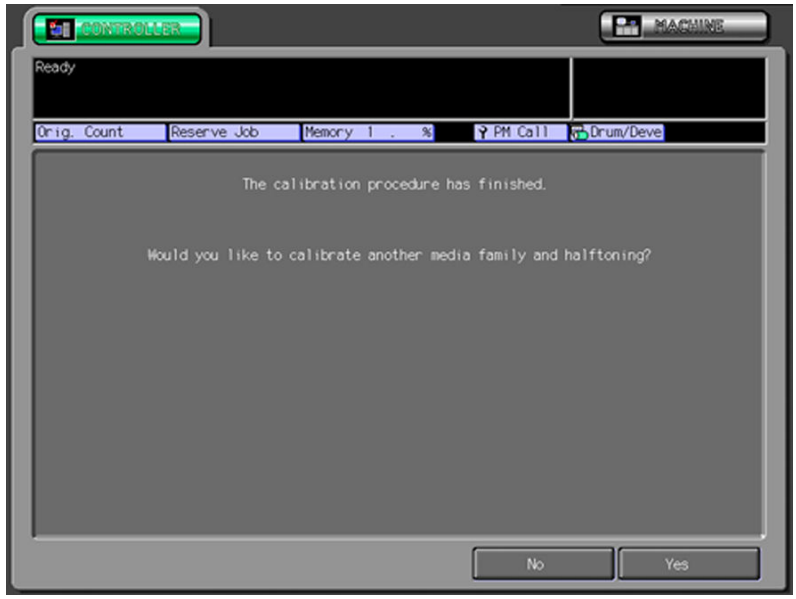
5. Press 'OK' to close the calibration view.

[61] Calibration view with succeeded scans

6. Press 'Yes' to save and apply the calibration

[62] Calibration confirmation window

7. Select one of the following options.



[63] Continue window

- Press 'Yes' to continue with the calibration procedure for another media family.
- Press 'No' to stop the calibration procedure.

Result

The controller is calibrated for the selected media family, halftone and media. Repeat the calibration for every media family, halftone and media you use.

4.4 Check the print quality

Introduction

The printer is now calibrated. You can print the Océ Colour Reference chart to check the print quality.

Print the Océ Color Reference chart

1. Print the file 'Océ Color Reference Chart.pdf'.

Result

A printed Océ color reference chart to evaluate the print quality.

Index

Calibration
Creo controller 17, 44
EFI controller 12, 39
main steps 8
Océ PRISMAsync controller 20, 47
why 7
Color reference chart
Color reference chart 10
Configuration
Configuration 6

G

Gamma offset
Gamma offset 33

P

Print quality
Print quality 10
after controller calibration 28
after printer calibration 55
at start 10

W

Warm up
Warm up 10
White point
White point 33